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**From:** Piro, Peter (DPH)  
**Sent:** Monday, April 25, 2011 9:17 AM  
**To:** Lawler, Michael (DPH); Salemi, Charles (DPH)  
**Cc:** Nassif, Julianne (DPH)  
**Subject:** RE: 1,4-BD Retraction

Mike,  
1,4-BD is similar in structure to GHB, minus the ketone. The article was "The extraction and IR Identification of GHB Acid from Aqueous Solutions" and I do not think it specifically talks about BD. Feel free to search for other literature and if you don't find anything better try verifying it yourself with BD in water before doing any samples. Then maybe try one or two of the samples that we already confirmed in water. Extraction efficiencies are not on par with say GBL/chloroform so that is why I'm suggesting extracting 2X to get adequate recoveries for confirmation. I used a 1 mg/ml BD standard, which hopefully is weaker than most street samples, and a 30:1 split on the GC/MS. I'll try contacting the NH State Police lab in case I'm missing something obvious with the chloroform or ethyl ether extractions.....maybe they isolated the wrong layer like me☺.

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**From:** Lawler, Michael (DPH)  
**Sent:** Monday, April 25, 2011 8:10 AM  
**To:** Piro, Peter (DPH); Salemi, Charles (DPH)  
**Cc:** Nassif, Julianne (DPH)  
**Subject:** RE: 1,4-BD Retraction

Peter,  
I am redrafting again the GHB screen protocol from the front end of the analysis. With that in mind and in consideration of the remaining levels of samples to prep and use, could you give me copies of the literature which supports this? I'd like to review the material before I do another prep, particularly in light of the apparent failure of the New Hampshire State Police scheme we attempted most recently.  
Thanks, Mike

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**From:** Piro, Peter (DPH)  
**Sent:** Monday, April 25, 2011 7:52 AM  
**To:** Lawler, Michael (DPH); Salemi, Charles (DPH)  
**Cc:** Nassif, Julianne (DPH)  
**Subject:** 1,4-BD Retraction

Hello All,  
To extract 1,4-BD from an aqueous sample, I'm suggesting we try a method similar to the extraction of GHB free acid. Aqueous samples are first saturated with NaCl and then extracted 2X with ethyl acetate in a 1:2 ratio (water:ethyl acetate). Excess ethyl acetate is then evaporated while making sure not to evaporate to dryness. During my last round of experiments with 1,4-BD I must have isolated the wrong layer, i.e. the H2O layer instead of the petroleum ether layer....mi culpa. It turns out that petroleum ether, chloroform and ethyl ether have limited success with BD extractions. Ethyl acetate seems to be a better extracting solvent and the trickery with NaCl is beneficial for total recovery levels.